

Amendments to the Specification

Please add the following paragraphs after the paragraph beginning on page 6, line 13:

Fig. 11 is a block diagram of a tracking system.

Fig. 12 is a block diagram of the layout of a personnel and asset tracking system.

Fig. 13 shows the interconnection of the components of a dependent monitoring system.

Please amend the paragraph beginning on page 9, line 13 as follows:

Referring back to Fig. 10, Infrared transmitter module 38 allows for integrated device 10 to be used with an infrared personnel tracking system 46. A coded IR signal, an identifying signal, unique to each integrated device 10 is received by IR receivers positioned throughout a facility in which tracking is desired, such as a hospital. The identifying signal includes an identification code which is unique to each integrated device 10. IR tracking system 46, such as those described in application serial no. 08/963,396 entitled Personnel and Asset Tracking Method and Apparatus and in application serial no. 08/960,425 entitled Active Badge or Tag for a Locating and Tracking System, both of which are hereby incorporated by reference, is coupled to paging dispatch system 40 as shown in Fig. 10. As disclosed in application serial no 08/963,396 the IR receivers are operably coupled to a processor, such as a master station or central server. At least one database including location information is accessible by the processor. Although an infrared-based tracking system using an infrared transmitter module 38 is shown, other personnel tracking technologies can be used, such as a tracking system based on RF transmitters, or ultrasound transmitters, etc.

Please add the following new paragraphs after the paragraph beginning on page 9, line 13:

As such, referring to Fig. 11, location system 46 includes a processor 300, at least one database 302 accessible by processor 300, and a plurality of receivers 304 operably

coupled to processor 300. In operation, portable integrated device 10 transmits an IR identifying signal 306 on a periodic basis. The IR identifying signal 306 is received by receiver 304. Based on the identifying signal 306 received by receiver 304, processor 300 updates location information in database 302 for the integrated device 10.

Referring to Fig. 12, an exemplary embodiment 308 of location system 46 is shown. The heart of the system is the central server 310 which maintains the awareness area databases 311 for the system over the entire area in which awareness of personnel and assets is to be monitored, the awareness area 321. The central server 310 receives location and status updates from at least one monitoring system through a communications network 312. Each monitoring system monitors personnel and assets throughout a sub-area of the awareness area, a sub-awareness area. Fig. 12 shows an independent monitoring system 325 monitoring a sub-awareness area 341 and a dependent monitoring system 315 monitoring another sub-awareness area 361. Both the dependent monitoring system 315 and the independent monitoring system 325 send location updates to the central server 310 over the network 312. The dependent monitoring system 315 does not maintain a local database, and thus depends on the central server 310 to handle location queries from clients 340. The independent monitoring system 325 maintains a local sub-awareness area 341 location database on the master station 324, and thus can support local queries for objects assigned to it independent of the central server 310. The independent monitoring system 325 receives signals transmitted by a personnel badge 350 or integrated device 10 worn by a person 351 and an asset tag 352 or integrated device 10 attached to an asset 355. The dependent monitoring system 315 receives signals transmitted by another personnel badge 350 or integrated device 10 worn by a person 353 and another asset tag 352 or integrated device 10 attached to an asset 357. An awareness area 321 and sub-awareness areas 341, 361 could be a building and its floors or a campus and its buildings. Each entity to be monitored in the awareness area 321 wears a personnel badge 350 or an asset tag 352 or integrated device 10 which transmits a unique object ID signal.

Access to the awareness area databases 311 maintained at the central server 310 can be gained from a client 340 or an administrative station 344 through the network 312. Further, access to the awareness area database can be gained from paging dispatch system 40. Client 340 can be connected to the network 312 locally (e.g. Intranet) or remotely (e.g. Internet). Independent monitoring system 325 can also access the awareness area databases 311 maintained on the central server 310 through the hospital network 312.

94 There are two types of sub-awareness area monitoring systems. A dependent monitoring system 315 is connected to the hospital network 312 through a router 314 as shown in Fig. 13. A dependent monitoring system 315 does not maintain sub-awareness area databases or support sub-awareness area queries but rather forwards all information to the central server 310. A dependent monitoring system 315 is comprised of a router 314, at least one hub 316 and a plurality of nodes 318. Each node 318 continuously monitors a particular area in the subawareness area for personnel badge 350 and asset tag 352 transmissions. Each node 318 communicates with and sends location messages to a hub 316. The hub 316 communicates with and sends location messages to the router 314. The router 314 communicates with and sends location messages to the central server 310 over the hospital network 312.

The second type of sub-awareness area monitoring system is an independent monitoring system 325 as disclosed in U.S. Pat. No. 5,561,412 which is hereby incorporated by reference. An independent monitoring system 325 has a set of personnel badges 350 assigned for which it maintains a local database on its master station 324 which also supports local queries and status messages. The master station 324 communicates with the central server 310 over the hospital network 312. In either type of monitoring system the process is triggered by the reception of a personnel badge 350 or asset tag 352 transmission at a receiver node 318. The receiver node 318 generates a presence or entry message which is sent to a downstream location processor.
